Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
Expanding the Economic and Innovation	)	Docket No. 12-268
Opportunities of Spectrum Through	)	
Incentive Auctions	)	
	)	
Unlicensed Operation in the TV Broadcast	)	Docket No. 04-186
Bands	)	
	)	
Additional Spectrum for Unlicensed	)	
Devices Below 900 MHz	)	Docket No. 02-380
and in the 3 GHz Band	)	

Comments of the White Space Database Administrators

Background

In a series of proceedings that culminated in 2012, the Federal Communications Commission (FCC) adopted rules to open vacant channels in the broadcast spectrum for unlicensed use.[1] The rules require unlicensed devices to query a database in order to determine what channels are available for use in a particular geographic location.[2] In 2011, the FCC conditionally designated ten entities to serve as white spaces database administrators.[3]

The White Space Database Administrators Group ("Database Administrators") consists of nine FCC conditionally designated database administrators.[4] The Database Administrators

[1] *See Unlicensed Operation in the TV Broadcast Bands*, ET Docket No. 04-186, Second Report and Order, 23 FCC Rcd 16807 (2008); *Unlicensed Operation in the TV Broadcast Bands*, ET Docket No. 04-186, Second Memorandum Opinion and Order, 25 FCC Rcd 18661 (2010); and *Unlicensed Operation in the TV Broadcast Bands*, ET Docket No. 04-186, Third Memorandum Opinion and Order, 27 FCC Rcd 3692 (2012).

[2] *See* 47 C.F.R. § 15.711.

[3] *Unlicensed Operation in the TV Broadcast Bands*, ET Docket No. 04-186; *Additional Spectrum for Unlicensed Devices Below 900 MHz and in the 3 GHz Band*, ET Docket No. 02-380, Order (rel. Jan 26, 2011); *Unlicensed Operation in the TV Broadcast Bands*, ET Docket No. 04-186; *Additional Spectrum for Unlicensed Devices Below 900 MHz and in the 3 GHz Band*, ET Docket No. 02-380, Order (rel. July 29, 2011).

[4] The nine members of the WS DBA Group include Airity, Inc.; Comsearch; Frequency Finder, Inc.;

was formed to (1) establish and maintain a database interoperability specification, (2) to support development of a device to database API specification, and (3) to address technical and operational issues as they arise that affect the operation of database administrators and work with the FCC at achieve resolution. By virtue of these functions, the Database Administrators have unique technical expertise on unlicensed issues.

Allowing Continued Use of Unlicensed Devices in the Remaining TV White Spaces and Adopting a "Use It or Share It" Condition for Spectrum Designated for Auction After Repacking is Technically Feasible.

As the FCC considers the challenge of developing an incentive auction framework that will allow increased spectrum to be made available for mobile broadband, it is feasible to pursue two measures to allow continued access to unlicensed spectrum under 1 GHz.

First, consistent with the proposals articulated in the Notice of Proposed Rulemaking in this proceeding, the FCC can continue to allow the operation of white space devices in the broadcast television spectrum on unused channels that are not repurposed for other uses under the current rules governing white space devices in the television band.[5] As the Commission itself noted, unlicensed devices can "serv[e] to augment the operations of licensed services and to meet the needs of a very wide range of wireless applications."[6] Moreover, industry is making rapid advances in the deployment of database technologies. In the last year, the FCC has certified databases offered by Spectrum Bridge and Telcordia,[7] and Wilmington, Delaware has deployed the first commercial white spaces network.[8] The FCC can support further developments in white spaces technology by allowing continued unlicensed use of vacant channels in the spectrum that remains allocated for broadcasting. The Database Administrators are unaware of any technical rationale that would support a different conclusion.

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[4]Google Inc.; LS Telcom AG; Neustar, Inc.; Spectrum Bridge, Inc.; Telcordia Technologies, Inc.; and Microsoft Corporation.

[4]

[5] *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, Docket No. 12-268, Notice of Proposed Rulemaking (rel. Oct. 2, 2012), ¶ 233 (NPRM).

[6] *Id.* at ¶ 228; Yochai Benkler, *Open Wireless v. Licensed Spectrum: Evidence from Market Adoption* (2011), *available at* http://cyber.law.harvard.edu/node/7226.

[7] Letter from Julius Knapp, Chief, Office of Engineering and Technology, FCC, to Rodney Dir, CEO, Spectrum Bridge, Inc. (December 22, 2011), *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-11-2044A1.pdf; Letter from Julius Knapp, Chief, Office of Engineering and Technology, FCC, to Mr. John Malyar, Chief Architect, Interconnection Solutions

[7]Telcordia Technologies, Inc.(March 26, 2012), *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-12-465A1.pdf.

[8] Amar Toor, *North Carolina Launches FCC-Approved TV White Spaces Network in Wilmington*, Engadget Blog (Jan. 30, 2012), http://www.engadget.com/.

Second, in the NPRM, the FCC asks whether it should make available for use all vacant spectrum in the current broadcast bands up until the time that any new service is actually deployed.[9] The process of designing the auction, soliciting bids, repacking, awarding licenses, and deploying service is likely to play out over several years. During that time, various segments of the current broadcast spectrum are likely to be unused -- whether because a channel is vacant and slated for repacking but has not been repacked, because a licensee has yet to deploy service in its newly acquired spectrum, or for any other reason. If spectrum is not being used by a licensee, it is technologically feasible for the FCC to allow database administrators to include unused spectrum in their databases.[10] Database administrators then have the capability to make that spectrum available for use by unlicensed devices. While temporary local use of fallow spectrum may not have been practical in the past, the Commission's ongoing certification of databases to govern opportunistic and conditional access by frequency-hopping radios makes this approach entirely feasible and relatively inexpensive. In fact, the FCC's rules require white spaces databases to query the FCC at least weekly to ensure that each database retains the most recent and accurate data on protected entities.[11] Therefore, adding spectrum and deleting spectrum from the database happens routinely and rapidly. As a consequence, spectrum where no licensed service is deployed can remain available for use until a relatively short time before a new service goes online without jeopardizing the rights of licensees, and that spectrum can be cleared without difficulty or delay when a licensed use is ready to go live.

Respectfully submitted,

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[9] NPRM at ¶ 405.

[10] For further discussion of "use it or share it" policies, see Michael Calabrese, *Use it or Share it: Unlocking the Vast Wasteland of Fallow Spectrum* (2011), *available at* http://ssrn.com/abstract=1992421.

[11] 47 C.F.R. § 15.715.